AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1-10. (Canceled)

11. (New) Method for determining a start-up crushing gap width for a crushing operation in a gyratory crusher, the crusher comprising a crushing head fastened on a shaft and provided with first and second crushing shells arranged to form a crushing gap to receive material to be crushed, the width of the crushing gap being adjustable , and a driving device arranged to cause the crushing head to execute a gyratory pendulum movement, the method comprising the steps of:

A. activating the driving device to cause the crushing head to initiate a gyratory pendulum movement, with the crushing gap set at a first start-up width;

B. commencing a feed of material into the crushing gap to initiate crushing;

C. measuring a load on the crusher resulting from the crushing;

D. adjusting the width of the crushing gap to cause the load to approach a selected value, and obtaining a measure representative of the adjusted gap width;

E. calculating a subsequent start-up width in accordance with the obtained measure of step D; and

F. setting the width of the crushing gap to correspond to the calculated subsequent start-up width of step E prior to repeating step A for a subsequent crushing operation.

12. (New) The method according to claim 11, wherein step B includes starting a countdown of a predetermined time period beginning with the start of the supply of material into the crushing gap; step D including determining whether the width adjustment has occurred within the predetermined time period; and step E being performed only if the width adjustment has occurred within the predetermined time period.

13. (New) The method according to claim 12 wherein the predetermined time period is in the range of 3-30 seconds.

14. (New) The method according to claim 12 wherein when a plurality of adjustments occur within the predetermined time period, step D comprises obtaining a measure that is representative of the crushing gap width following the first width adjustment that was made.

15. (New) The method according to claim 14 wherein the predetermined time period is in the range of 3-30 seconds.

16. (New) The method according to claim 11 wherein step E comprises determining a ratio between the adjusted width of step D and a constant-operation

reference width, and calculating the subsequent start-up width in accordance with the ratio.

17. (New) The method according to claim 16 further comprising performing steps A-F for a plurality of crushing operations, calculating a mean value of the ratios determined in step E for the plurality of crushing operations, and calculating the next subsequent start-up gap in accordance with the mean value.

18. (New) The method according to claim 17 wherein the plurality of crushing operations is in the range of 3 to 10.

19. (New) Method for determining a start-up crushing gap width for a crushing operation in a gyratory crusher, the crusher comprising a crushing head fastened on a shaft and provided with first and second crushing shells arranged to form a crushing gap to receive material to be crushed, the width of the crushing gap being adjustable , and a driving device arranged to cause the crushing head to execute a gyratory pendulum movement, the method comprising the steps of:

A. activating the driving device to cause the crushing head to initiate a gyratory pendulum movement, with the crushing gap set at a first start-up width;

B. commencing a feed of material into the crushing gap to initiate crushing, and starting a countdown of a predetermined time period at the start of the supply of material into the crushing gap;

C. measuring a load on the crusher resulting from the crushing,

D. adjusting the width of the crushing gap to cause the load to approach a selected value, and determining whether the width adjustment has occurred within the predetermined time period; and;

E. setting a gap width for a subsequent crushing operation to be the same as the first gap width, when the width adjustment of step D occurs after the predetermined time period.

20. (New) Apparatus for determining a start-up crushing gap width for a crushing operation in a gyratory crusher which comprises a crushing head fastened on a shaft and provided with first and second crushing shells arranged to form a crushing gap to receive material to be crushed, the width of the crushing gap being adjustable, and a driving device arranged to cause the crushing head to execute a gyratory pendulum movement, the apparatus comprising:

activating means for activating the driving device to cause the crushing head to initiate a gyratory pendulum movement in a crushing operation, with the crushing gap set at a first start-up width;

measuring means for measuring a load on the crusher resulting from the crushing;

adjusting means for adjusting the gap width to cause the load to approach a selected value;

obtaining means for obtaining a measure representative of the adjusted gap width; and

calculating means for calculating a subsequent start-up width for a subsequent crushing operation in accordance with the obtained measure.

21. (New) Apparatus according to claim 20 further including a clock for counting down a predetermined time period beginning with the supply of material to the gap, wherein said calculating means is operable to calculate the subsequent start-up width only if the width adjustment is made within the predetermined time period.